Volunteer Lake Assessment Program Individual Lake Reports

PLEASANT LAKE, NEW LONDON, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	7,488	**Max. Depth (m):**	28.6	**Flushing Rate (yr^{-1}):**	0.7
Surface Area (Ac.):	606	**Mean Depth (m):**	10.5	**P Retention Coef:**	0.6
Shore Length (m):	7,200	**Volume (m^3):**	25,761,000	**Elevation (ft):**	805

TROPHIC CLASSIFICATION

Year	Trophic class
1979	OLIGOTROPHIC
1993	OLIGOTROPHIC

KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

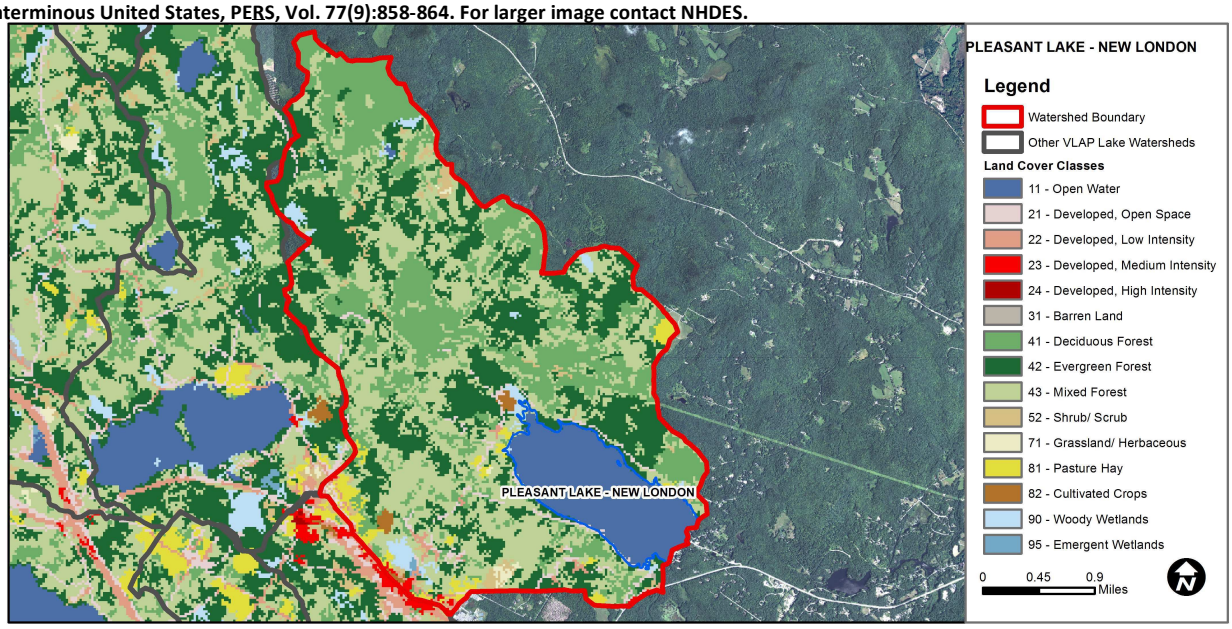
Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.
	D.O. (% sat)	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Chlorophyll-a	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
Primary Contact Recreation	E. coli	No Data	No Data for this parameter.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

PLEASANT LAKE - ELKINS BEACH	E. coli	Bad	>/=1 exceedance(s) of geometric mean criterion and/or >/=2 exceedances of single sample criterion, with 1 or more >2X criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



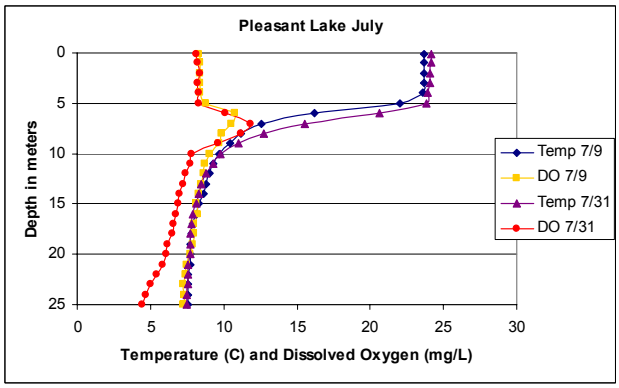
Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	9.6	Barren Land	0.02	Grassland/Herbaceous	0.29
Developed-Open Space	1.79	Deciduous Forest	22.5	Pasture Hay	1.91
Developed-Low Intensity	0.76	Evergreen Forest	26.98	Cultivated Crops	0.42
Developed-Medium Intensity	0.34	Mixed Forest	32.34	Woody Wetlands	1.49
Developed-High Intensity	0	Shrub-Scrub	1.5	Emergent Wetlands	0.09

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
PLEASANT LAKE, NEW LONDON, NH
2012 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphic)*

- **CHLOROPHYLL-A:** Chlorophyll levels were low throughout the summer and below the NH lake median. Historical trend analysis indicates chlorophyll levels tend to fluctuate from year to year.
- **CONDUCTIVITY/CHLORIDE:** Conductivity levels were relatively low and approximately equal to the NH lake median.
- **E. COLI:** E. coli was not present at the stations monitored.
- **TOTAL PHOSPHORUS:** Phosphorus levels were very low at all deep spot and tributary stations. Historical trend analysis indicates a relatively stable epilimnetic (upper water layer) phosphorus level since monitoring began.
- **TRANSPARENCY:** Transparency was relatively stable throughout the summer and well above the NH lake median. However, historical trend analysis indicates a significantly decreasing (worsening) transparency since monitoring began.
- **TURBIDITY:** Turbidity levels were low at all deep spot and tributary stations.
- **pH:** pH levels decrease in the hypolimnion (lower water layer) due to natural processes. Historically, pH levels tend to fall below desirable ranges and could potentially be critical to aquatic life.
- **RECOMMENDED ACTIONS:** Transparency has significantly decreased, however algal growth and phosphorus levels have not increased in the lake. There could be an increase in suspended sediments in the water column from significant storm events. Identify areas in the watershed prone to erosion and implement best management practices to reduce sedimentation during storm events. Educate watershed residents on ways to reduce stormwater runoff from their properties.

Dissolved Oxygen & Temperature Profile



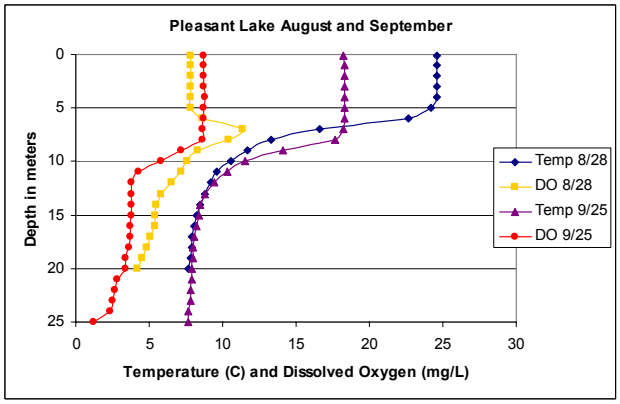


Table 1. 2012 Average Water Quality Data for PLEASANT LAKE

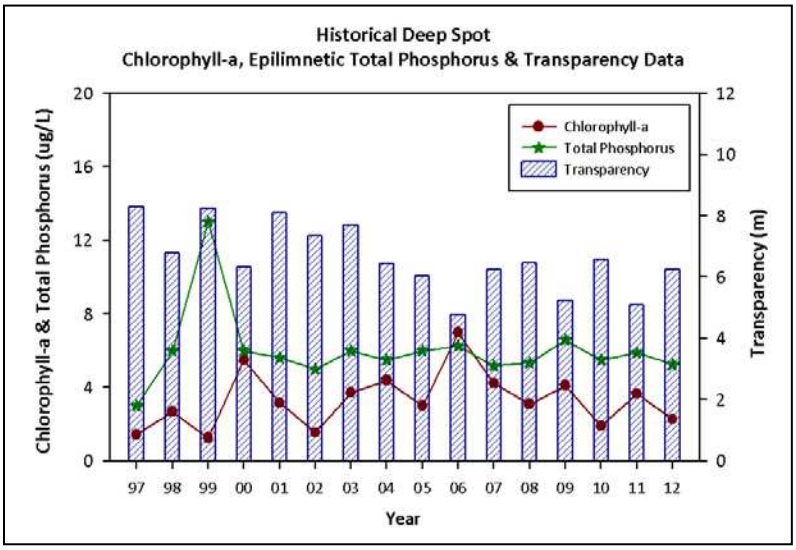
Station Name	Alk.	Chlor-a	Cond.	E. Coli	Total P	Trans.		Turb.	pH
	mg/l	ug/l	uS/cm	#/100ml	ug/l	m		ntu	
						NVS	VS		
Chandler Brook			41.2		5			0.38	6.52
Deep Epilimnion	5.28	2.27	43.4		5	6.26	6.75	0.54	6.52
Deep Metalimnion			38.9		8			0.85	6.28
Deep Hypolimnion			41.2		7			0.75	5.96
Outlet			48.7		5			0.40	6.21
Pl 7			41.4	0	5			0.49	6.50
Pl 8			41.1		6			0.42	6.62
Turtle Cove			41.3	0	7			0.76	6.29
White Brook			41.0		6			0.50	6.61

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation
Chlorophyll-a	Variable	Data fluctuate annually, but are not significantly increasing or decreasing.
Transparency	Degrading	Data significantly decreasing (worsening).
Phosphorus (epilimnion)	Stable	Data not significantly increasing or decreasing.



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